

# Salernitan Medical School or Langobardic Medical School?

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**Summary.** Already famous since the high Middle Ages, the Salernitan Medical School reached its whole scientific role between the 11<sup>th</sup> and 12<sup>th</sup> century, declining later due to the rising of modern universities. Information on the earliest period of the School is very poor but, starting from the 10<sup>th</sup> century, we know that Salernitan physicians were widely recognized as researchers and healers. This paper is focused on the heavy role recognized to the Langobards (first) and Normans (later) on development of the Salernitan Medical School. A special role must be recognized to Alfanus I, Gariopontus and Trotula de Ruggiero: they left memories on their enterprises and many manuscripts of great relevance for the development of Middle Ages and Renaissance Medicine. Their multicultural experience dragged the Salernitan School to become the greatest expression of medical science of its age. This role was expressed in the “Regimen Sanitatis Salernitanum” or “Flos Medicinæ Salerni”, a book that resumes the highest knowledges on general hygiene, dietetics, physiotherapy, comparative anatomy and surgery. The book had a tremendous success, having more than 300 editions in many languages up to 1846. It was an essential reference for western medical literature up to Renaissance. Furthermore, Langobards took care of health laws, mainly in the Rotari edict, which included laws on medical practice and on the physicians’ role. ([www.actabiomedica.it](http://www.actabiomedica.it))

**Key words:** Salernitan Medical School, Schola Medica Salernitana, Regimen Sanitatis, Langobards, Middle Ages

## Introduction

Along centuries, many articles and books have been written on the Salernitan Medical School (SMS), thus making rivers of ink to flow. Thus, it may seem that nothing needs to be discussed furthermore.

Whilst the newborn Islamic world was embracing Europe like a crescent, separated by the Mediterranean Sea, Salerno was a cosmopolitan and rich city. It was, therefore, a link between eastern and western medical traditions (Fig. 1).

Already famous since the high Middle Ages, the SMS reached its whole scientific role between the 11<sup>th</sup> and 12<sup>th</sup> Centuries, then declining later due to the rising of modern universities, being Bologna and Montpellier among the earliest and most renowned.

After centuries of gradual decline, SMS was de-

finitively suppressed on November 29<sup>th</sup> 1811 by Gioacchino Murat, during his short kingdom in Naples. Today there is no certain track regarding the site where the school was built, except for the Minerva’s garden (restored in 2001), probably a botanical garden aimed to the cultivation of medical herbs. Furthermore, we cannot exclude that many SMS classrooms have been reconverted, like the upper and the lower chapel of S. Catherin Cathedral in Salerno and S. Thomas and S. Lazarus room as well.

Although information regarding the most ancient period of the SMS is poor and sometimes mythological (1-5), we know for sure that starting from the 10<sup>th</sup> Century Salernitan physicians were recognized as smart researchers and effective healers (3-6).

For example, in 985 a.D. Adalbert II, Bishop of Verdun, went to Salerno searching for a medical as-



**Figure 1.** The Salernitan Medical School in a miniature from the Canon of Avicenna

assessment, despite the journey was very long and dangerous. The SMS was undoubtedly famous worldwide, and the journey was warranted. Furthermore, due to the importance reached by the SMS, for centuries many physicians throughout Europe, when aiming for an international fame, told they were “Salernitan”. Roger Frugardi, or Ruggiero Frugardo, from Parma, represents a famous example: he wrote a book, “*Practica Chirurgiae*” (the Surgical Practice), then edited and published by his pupil Guido “the young” from Arezzo). Probably for the aforementioned reasons he was widely known as “Rogerius Salernitanus” (Roger from Salerno), to mean that his scientific success was a consequence of the affiliation to the SMS. The real story tells us that he actually was Scandinavian and that he moved to Parma where his father was based following the Emperor Frederyk I, the “Barbarossa” (7).

### The Langobardic influence on Salernitan Medical School

In 847 a.D. Salerno became the capital of an independent Langobardic Princedom, geographically surrounding Naples territories. The healthy area where the SMS arose was strongly involved in its development, and Salerno was called “*Civitas Hippocratica*”. A strong role has been recognized to the Byzantines’ culture preserved into the monasteries (e.g., the

Montecassino Abbey, well known for including an “hospital”) and to the commercial exchanges with the Mediterranean countries. As such, several medical cultures (e.g.: Greek, Arabic, Latin and Jewish) flowed to and through Salerno, that became the melting pot and the forge of a new knowledge (8).

At that time Salerno became Bishop’s site and some of the most representative authorities (e.g., Peter and Grimoaldus) where both bishops and physicians (3,4). The most famous was undoubtedly Alfanus I (1010-1085), already monk in Montecassino, who played a special role during the transition from the Langobardic to the Norman domination of Robert “the Guiscard” from Altavilla. Alfanus, Bishop, poet and physician was Langobard and was defined as “the greatest cultural protagonist of literature and science in Salerno” (9). He sang the glory of the city and its school: “It thrived so much in the art of healing, that no one could stay sick” (6).

He translated many books from Greek to Latin and was a very prolific author as well. Among his works a special mention must be given to “*De pulsibus*”, based on the galenic heritage, and the “*De quatuor humoribus corporis humani*”. In this latter book, next to the theory of the “four humors” there are some original in-depth analysis regarding phytotherapy. Alfanus introduced also a milestone innovation; for the first time in the History of Medicine he described a laboratory test: the “uroscopy”, mythological ancestor of the modern urine test (3-6). It was the start-up of a new concept, deeply developed in the next centuries: in the observational science, not only the patient should be involved, but also all the liquids that he produces or that could be extracted from him. Urine was touched, tasted (this happened already in the Greek and Latin classical world, thus generating the concept of diabetes mellitus, from the word “mellis”, honey), sniffed and observed with the aim to catch chromatic differences, transparency and the presence of a sediment (3-5).

In order to point out the plot between the Langobards and the SMS at this time we need to step back talking shortly about the Langobard people.

Paulus Diaconus, in his very famous “*Historia Langobardorum*”, a milestone for the knowledge of those peoples, tells about the Langobard departure directed to Italy: “... the Winnili population (as the Lan-

gobards defined themselves) moved from Scania (the southern Scandinavia) finally dominating Italy..." (10).

Langobards arrived to Italy in 568 a.D., led from their most famous King, Alboin, following the Elbe river first, and part of the Danube river later. They dominated Northern Italy up to the 774 when the Emperor Charlemagne defeat their King Desiderius. Nevertheless, in Southern Italy there were some survived independent Langobardic princedoms. Salerno was one of those where Langobardic domination was ended by Normans (Robert "the Guiscard") in 1076, approximately three centuries after the collapse of the northern Langobardic kingdom (11).

Around 754-756, during the last years of their domination in Northern Italy, many aristocratic Langobards joined the Christian religion and left their office in order to become monks. They founded many monasteries: Leno and San Salvatore close to Brescia in Northern Italy; Farfa della Sabina in the Central Italy, and San Vincenzo al Volturno and San Clemente from Casoria in the South. It is not so easy for us to understand why these people left their own nobiliary offices embracing the Christian religion and being retired in a cloister: maybe the aim to break away from sin being fully involved by God; maybe because of the political instability of the kingdom and the raising threat of French invasion (11). Comparing with bloody battles, life in a monastery was obviously safer. So, in few years, monasteries were packed of hundreds of monks coming from Langobard noble classes. Many monasteries were changed: from religious centers to centers of political, economic and cultural power, thus being involved in the Italian transition from the High to the Low Middle Ages (11).

Within the monasteries the monks were involved in transcriptions and comments of the ancient books of medicine, also taking care of suffering patients located into the annexed infirmaries. It was in that period that the end of the era of transcription/translation of classic books (Hippocrates, Celsus and Galenus) took place; a new era, a creative time of Western Medicine was rising (8).

Monks were widely experienced on medical herbs, that they were used to classify according to their properties, and that they used in order to cure several diseases (6,12). Their medical expertise was related to

the "Regula Benedicti", founded by Benedetto from Norcia, who wrote, in the chapter XXXVI: "Infirmis ante omnia et super omnia cura adhibenda est" (first of all and overall, we must take care of sick people) (13).

In this situation of Langobardic society transformation, next to Bishop Alfanus I, another Langobard monk and physician, Gariopontus, gave a heavy support to the composition of medical books for SMS. Gariopontus was a careful observer and semeiologist: he carefully described some distinct kind of malarial fever, and paved the way for the development of pathophysiology, writing the famous sentence "si causas ignoras, quomodo curas?" (if you don't know the cause, how could you cure it?) (12).

A very singular character was Trotula, a noblewoman from the Norman family of De Ruggiero from Salerno, active and famous around 1050 (14). She was a very famous lady-physician and, in someone's opinion, she was representative of 7 Salernitan lady-physicians: Abella, Calenda, Costanza, Francesca, Guarna, Mercuriade and Rebecca. As such, she could also be considered like a mythical confluence of several traditions (15) (Fig. 2). Anyway, she was the founder of the modern Obstetrics and Gynecology, and wrote the book "De mulierum passionibus ante, in et post partum" (The sufferings of women before, during and after delivery). Among other indications, she wrote "it is necessary to stitch perineal lesions due to delivery", a very modern thought. Despite a substantial lack of evidence, about one hundred manuscripts have been attributed to Trotula, many of those written around the XIII and XIV century, thus well after her death. According to the tradition, she married a famous physician, Johannes Platearius "the Old", having from him

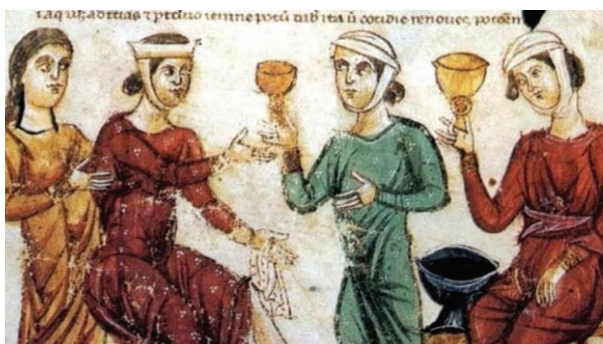


Figure 2. Trotula de Ruggiero and the "lady-physicians"

two babies: they have both become physicians, Medical Masters of the SMS: the so called “Magistri Plat-earii” (14).

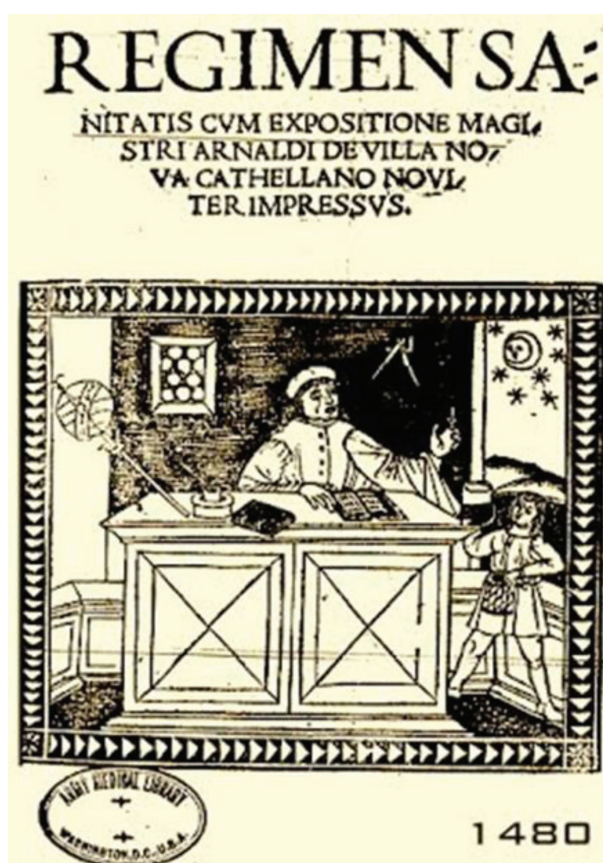
Thanks to its very active commercial harbour, Salerno was continuously open to the arabic and oriental world. In 1080 Costantinus Africanus (1010-1087), a physician from Carthage, landed in Salerno. He was described by Paolus Diaconus as “a monk fully aware about philosophy, Master of East and West, new bright Hippocrates” (10). He spent his own life between Salerno and the close monastery of Montecassino, translating many Arabic medical books into Latin, thus being heavily involved in the cultural evolution essential for the escape from the so called Dark Centuries (6).

This multicultural evolution drove the SMS to be the greatest expression of the medical science of its time. This cultural primacy was expressed in the “Regimen Sanitatis Salernitanum” or “Flos Medicinæ Salerni” (Handbook of Salernitan Healthcare, or Flower of Salernitan Medicine) (Fig. 3). It was written throughout some centuries thanks to the contributions of many of the greatest scientists of that time. According to the legend, the manuscript was written with the aim of being offered to Robert, duke of Normandy and son of William the Conqueror, who came to Salerno to take care of a wound he suffered during the crusade (6). The “Regimen” was something like a compendium, including basics of general hygiene, dietetics, physiotherapy, compared anatomy (funded on zootomy) and surgery. It was a huge success and up to 1846 three hundred editions were printed, being translated in several languages, thus becoming a cornerstone of the entire western medical literature up to the Renaissance (16) (Fig. 4).

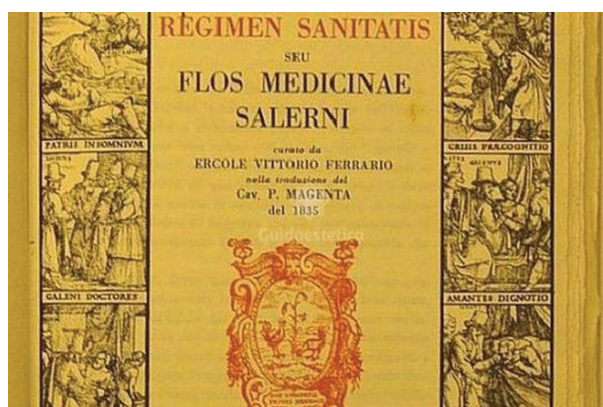
The concepts and precepts were poetically exposed, like the famous “dinner aphorism”:

“When dinners are lavish,  
to the stomach are dangerous.  
If you want the sleep be light,  
the dinner must be short” (17)

The Langobardic contribution to the Medicine, nevertheless, was not limited to the SMS development and partnership with Benedictine monks. They were involved in medical law, as well. The Edict of Rotari, wrote by their main legislator in 643 a.D., regards Langobard people’s life, medical practice laws and physician’s role. It states, for example, that who was



**Figure 3.** An ancient edition (1480) of the Regimen Sanitatis Salernitanum



**Figure 4.** One of the last editions (1835) of the Regimen Sanitatis Salernitanum

accused for lesions must cover for what the physician ask to be paid, and who was responsible of a wound to anybody must look for a physician (11).

Finally, they left an unforgettable fingerprint in Italian language (for example, the region Lombardy

takes its name from Langobards), and in particular in medical terminology. There are some words still used in medical slang, that are for sure of Langobard origin:

- “Binda”: strip used for medication, now called bandage (Italian: benda)
- “Hurf”: scalp disease now known as dandruff (Italian: forfora)
- “Zaff”, part of a bandage used for wound medication or wound closure and now known as plug (Italian: zaffo) (12)

## Conclusion

The SMS represents for sure a very famous step in Western Medicine evolution. Traditionally, it has been regularly highlighted the Greek, Latin, Jewish and Arabic contribution, underestimating the heavy role coming from Langobardic domination. Langobards were a brilliant, warrior and rude population; but they were careful, curious and astute as well, able to absorb and keep together several political and cultural aspects of the populations who they have faced along their own history.

SMS was unable to get an institutional organization in order to give an organic and coded education to its pupils, giving them something like a degree. Nevertheless, the word “doctor” was used in Salerno for the first time. This was due to the corporative, rather than academic, organization of the SMS. However, in 1221 Friedrich II of Svevia decided that nobody could be qualified to practice Medicine unless a public examination was passed at the SMS. In fact it was established that “the king’s subjects need to avoid dangers due to paucity of experience of physicians” (18). But this happened too late, because during the 13<sup>th</sup> Century many European universities rose up: Bologna, Paris and Montpellier, in particular, excelling in medical studies. It was the beginning of an isolation and decadence of SMS who drove it to a slow extinction (19). As such, Murat’s decrees were just a paper conviction added to a process already closed.

**Conflict of interest:** Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

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